

41. *Properties and Effects of the Digitalis Purpurea*.—The Nos. of the *Archives Générales* for January and February last, contain an interesting memoir by M. JONET, on the *Digitalis purpurea*. From all the facts which this writer has collected, he infers—

1st. That the powder and watery extract of digitalis, (he prefers the latter,) may be administered in doses as high as sixteen or eighteen grains, commencing with one grain, and daily increasing the dose, without in most cases producing marked disturbance of the digestive functions. That the alcoholic extract cannot be depended upon, and that the ethereal extract is the most uncertain preparation. The infusion he considers as the most active preparation, and the dry plant to be preferable to the fresh leaves.

2d. That in a great majority of cases, digitalis employed in powder, aqueous extract, and especially in infusion, exerts an irritating action upon the digestive organs, always evinced by colic, diarrhoea, nausea, and vomiting. That the property of the digitalis in rendering the pulse slower is indisputable, and that the gastro-intestinal irritation does not prevent this result. That the respiration may be affected by the remedy, dyspnoea most frequently disappearing as the pulse diminishes in frequency. That a distinct disorder of the nervous system is rarely observed after the administration of digitalis. That the digitalis really possesses hydrogogue properties; and that the decoction of this plant in the dose of from two to four ounces, applied to the abdomen, is a powerful diuretic, very preferable to the internal administration of other diuretics, because it may be employed in all cases of gastro-intestinal irritation.

3d. That palpitations of the heart, which are most frequently the prelude to a severer affection, ordinarily yield to the use of digitalis. That anasarca and ascites may be relieved by the judicious use of this plant, and that the success attributed to it in mania, hæmoptysis, advanced phthisis, scrofula, and many other diseases is certain.—*Archives Gén. March, 1834.*

42. *Ointment for the Cure of Porrigo*.—The following ointment has been found by M. BIETT more efficacious in the cure of porrigo than any other remedy:—℞. Iodur. sulph. 24 to 36 grs.; Axung. ʒj.—*Bull. de Therapeutique.*

43. *On Rhatany Root*. By M. SOUBEIRAN.—Rhatany is one of those remedies to which the medical profession are much indebted, and it is considered as one of the best of the astringent class for internal use. It is important, however, to obtain the expected results from it, that it should be used with proper precautions, and with a full knowledge of its powers.

Vogel, Gmelin, Peschier and Tromsdorff, examined this root, and if some points connected with its analysis are not completely elucidated, yet its chemico-medical history has been fully developed. Rhatany contains tannin in three states:—1st. Purc; in which case it is colourless, and possesses all its peculiar properties. 2d. In a state insoluble in water, resulting from the alteration of the tannin by contact with the air; in this state it has lost its solubility and astringency. 3d. In the form of extractive, this is a soluble combination of pure tannin with No. 2, and gives to the fluid preparations of rhatany their characteristic red-brown colour. This root also contains a small proportion of gum, a little fecula, some saccharine matter, and an acid whose properties are not yet fully determined.

It is generally used in decoction or in extract, each of which forms may be modified to meet the exigencies of the case.

Water acts on rhatany root in different manners, according to the temperature at which the preparation is made. The decoction is a fluid of a dark red colour and astringent taste, and which becomes more or less turbid on cooling. The infusion is much less highly coloured. It is of a reddish-yellow; and judging from its appearance alone, its efficacy would be said to be much inferior to that of the decoction, but on tasting the two preparations, another opinion would be formed. Notwithstanding the light colour of the infusion, its astrin-

gent taste greatly surpasses that of the decoction, and in fact is the most energetic preparation. When rhatany is placed in tepid water, this is absorbed by it, and dissolves all the soluble tannin, the gum and saccharine matter, but if its action be prolonged, the teguments of the fecula are torn, and the soluble matter enters into combination with the tannin and dissolves it; at the same time, the soluble tannin becomes saturated, as it were, with No. 2, spoken of above, and an additional quantity of this latter is formed by the oxidizing action of the air. The decoction is dark coloured, and at the same time but little charged with the active principle on the one hand, because the effects of tannin are diminished by its union with the insoluble matter and fecula, and on the other because the vegetable fibre becomes saturated with it, and contributes to abstract it from the solution. This solution becomes turbid on cooling, by the precipitation of a part of the insoluble matter, and by the separation of tannate of starch, which is not soluble in water below 122° F.

The *Codex* orders the extract to be prepared by exhausting the root with alcohol at 22°, and evaporating this tincture to get rid of the vehicle. In endeavouring to ascertain why the *Codex* has made choice of alcohol, we have supposed it was with the intention of diminishing the chances of any alteration of the tannin, as the evaporation can be for the most part carried on in close vessels and at a low temperature. But we here have an instance of the inconvenience of adopting the best founded theoretical principles, when their applications have not been confirmed by a special reference to existing circumstances.

I prepared four different extracts, one by decoction in water; one by infusion, another with alcohol at 22°, and the fourth with alcohol at 33°. I repeated this with different roots, and obtained the following general results. Alcohol at 33° and at 22°, furnished the greatest proportion of extract. The decoction gave less, and the infusion a still smaller quantity; but when the medicinal value of these preparations are considered, the results are widely different. The extract by infusion contained 90 per cent. of soluble matter, that by decoction gave 40 per cent. of insoluble remainder. In the alcoholic extract made with the excipient at 33° there was from 60 to 75 per cent. of soluble matter, this was rather less when alcohol at 22° was used.

In the extract by alcohol at 33°, all the soluble matters contained in the root are to be found, with the exception of a small proportion of the gum and fecula; the evaporation being made in a closed vessel, the tannin was unaltered, and hence the extract represented all the pure tannin which the root originally contained. Alcohol at 33° is in fact the vehicle which furnishes the largest proportion of tannin, but it then is mixed with the matters insoluble in water.

That obtained by alcohol at 22° is very analogous to the preceding, except that it contains more of the gum.

Decoction caused a great loss of tannin. Many circumstances combined to occasion this; the fecula which unites with one part, the ligneous fibre which becomes saturated with it, and the prolonged action of air and heat, all tend to diminish the quantity in the preparation. The insoluble matter is here a mixture of two bodies; No. 2, which is soluble in alcohol, and the compound of tannin and fecula, which is not.

The extract by infusion is richest in soluble matter, the water only takes up what is permanently soluble, and hence the extract itself is wholly soluble in that fluid, with the exception of the small portion which has become oxidized during the evaporation.

It results from what has been said, that the extract made from the infusion is to be preferred, as it contains the greatest proportion of the active principle. At the same time, I would observe that the relative quantities of soluble and insoluble matters contained in an extract of rhatany are of course variable, as each root furnishes different proportions, and also that the manner in which the operation is conducted, materially influences the results.—*Journ. of Phil. Coll. of Pharm. and Journal de Pharmacie*, Nov. 1834.